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The Flavor of SALT

Great will and determination at the highest political levels were essential to permit the U.S.-Soviet strategic arms agreement to be signed. The protests of nuclear numerologists had to be overcome, since requiring perfect symmetry when none is possible would have been sufficient to bring the negotiations to a permanent stalemate. There is no calculus that can manipulate simple counts of missiles, nuclear warheads, and total megatonnage to obtain precise equivalence when the United States and the Soviet Union differ as they do in geography and in design approaches to their weapons systems.

The SALT (strategic arms limitation talks) agreement is a substantial and necessary advance toward arms stabilization, even though it does not, by itself, achieve this goal. It will control two of the most virulent contributors to the U.S.-Soviet arms race by limiting antiballistic missiles (ABM's) to a militarily insignificant level and by limiting the seemingly endless buildup of Soviet strategic missiles.

The agreement has other significant ramifications. By limiting missile defense, we now have official recognition that deterrence is to be the strategic posture for both sides. By implicitly recognizing the United States and the Soviet Union to be nuclear peers, hopefully both sides can forego the presumed political benefits stemming from appearances of superiority. By banning deliberate concealment measures that might interfere with "national means" of verification, the agreement legitimizes the U.S. requirement of keeping track of Soviet strategic arms activity.

On the other hand, the United States and the Soviet Union can still race to produce weapons not limited by the agreement—for example, long-range bombers. Both can also devote tremendous resources to modernizing and replacing those strategic forces whose numbers are limited by the agreement. It will take at least one more round of successful negotiations before we can stabilize the nuclear equation.

From an early stage in the negotiations, it was known that the agreement would not include control of multiple independently targeted reentry vehicles (MIRV's). It was a bitter disappointment to many that the political and technical complexities involved in controlling MIRV's were not surmounted. Now it will be difficult to put the MIRV genie back into the bottle.

However, if restraint and caution are exercised on both sides, ironically, MIRV's could facilitate arms reduction. With MIRV's each side can meet its security requirements with substantially smaller forces than it now has. For example, a small submarine force equipped with MIRV's is sufficient to devastate an opponent and overwhelm any conceivable defense system (20 submarines can launch more than 3000 nuclear warheads, each several times the size of the Hiroshima bomb). Also, such a submarine force could be kept invulnerable, particularly if both sides can agree to avoid measures that might be judged threatening to the other's strategic submarine forces. Furthermore, with the passage of time, improvements in accuracy will make land-based missiles appear to be increasingly vulnerable, and their foreseeable obsolescence should make their reduction easier to accept.

But if fear, suspicion, and propensity for arms buildup do not subside on both sides, SALT will have proven to be an exercise in futility. Let us hope that this first step encourages restraint and quickly leads to the agreements now necessary to achieve nuclear stability.—J. P. RUINA, Department of Electrical Engineering, Massachusetts Institute of Technology, Cambridge 02139